

# **Agenda**

- What is governance in the context of SOA?
- Why is governance of a SOA so hard?
- The NCES Metadata Environment
- NCES Service Discovery Challenges
- The Net-Centric Publisher
- Applying Semantics
- Questions & Answers

### **Governance in Service Oriented Architectures**

## First: Why SOA?

- Improved agility in business processes
- Improved decision making through information flow
- Decreased cost of change
- **–** ....

## Why Governance?

- The business proposition of SOA collapses without structure in the way a Service-Oriented Enterprise is managed
- If the Enterprise cannot:
  - Publish services,
  - Find services easily, and
  - Use services easily...

Then the promises of SOA will fail to be realized.

If the Governance is broken, then so is the Architecture

## **SOA Governance**

#### What makes it hard?

- Differences in processes across the Enterprise
- Resistance to change
- Policy Confusion
  - Differing interpretation of policies
  - Conflicts between old and new policies (failure to appreciate changes in underlying assumptions)
- Information Assurance and Security
  - Balancing the needs to know, to protect, and to share
- Competing Interests
  - Lots of mission needs
  - Lots of differences in approach
  - Lots of stakeholders

All of this adds up to increased complexity

Governance must support diversity and complexity!

## **Case Study: NCES Service Discovery**

## NCES Service Discovery

 A UDDI-compliant registry used with other supporting capabilities to enable publication and discovery of services across the DoD Enterprise

## Challenges

- Governance
  - The governance processes employed required users to be familiar with multiple capabilities in order to publish a single service
    - This caused confusion for users
  - Organizations wanted to find services in different ways
  - Organizations wanted to categorize services differently
  - The guidance did not consider community specific needs

#### UDDI

- Products are onerous for operators to use, navigate, and understand
- Search API has limitations; data model is unintuitive

#### Tools

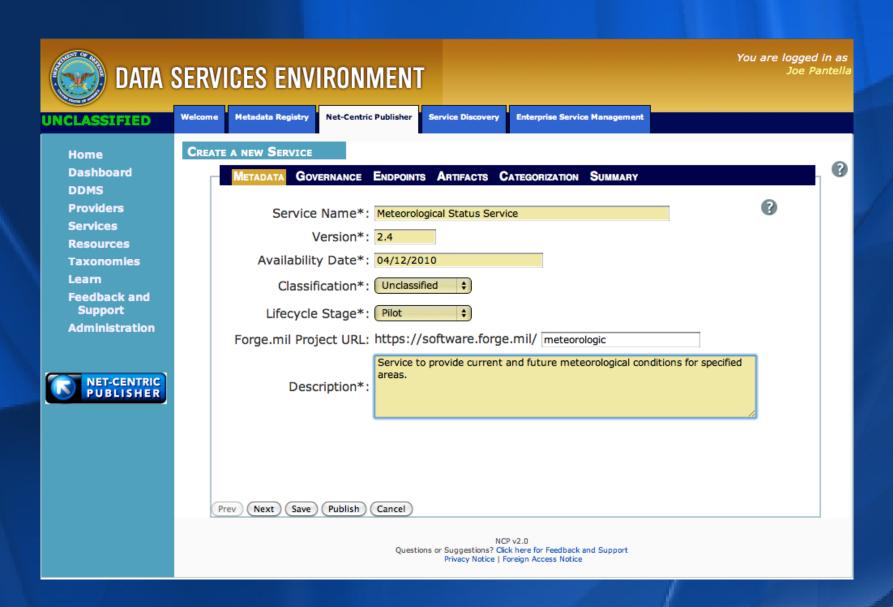
- Governance tools are complex to configure & use
- UDDI population is inconsistent between tools

# **Case Study: Overcoming the Challenges**

#### Net-Centric Publisher

- Provides a vastly simplified user interface with an integrated workflow for publishing metadata and services into the NCES Metadata Environment
- Formalizes the agreed upon governance processes
- Eliminates the need for user interaction with underlying infrastructural capabilities
- Eases the complexity of service publication by removing the need to understand UDDI and leveraging the users' understanding of the higher order concepts
- Improves the user experience
  - Provides contextualized help at each step in the process
  - Focuses on supporting the user, not simply the data entry

# **Net-Centric Publisher**



# **Applying Semantics**

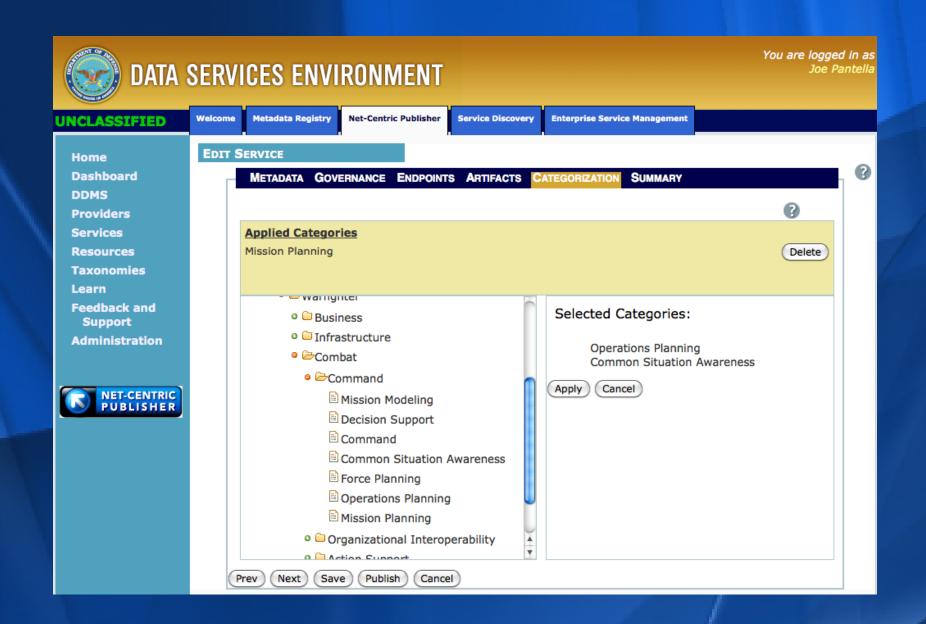
## Challenge: Enabling diversity among organizations

- Applying semantics to services allows for users to register and discover services in a way that best suits their needs
- It allows users to categorize services both for the enterprise and for their existing user base
- The DoD/IC SR&G Working Group identified the "Mission Areas" taxonomy as the taxonomy that is required to be used when registering a service.
  - The problem is the Mission Area taxonomy is very broad
    - Useful at the Enterprise level, but not at the COI level

## How did we address this challenge

- By leveraging UDDI tModel support to enable COI taxonomies
- By allowing users to easily add and apply their own taxonomies
- By making the application of these taxonomies easy
- By enabling validation services to ensure correct usage & integrity

# **Net-Centric Publisher**



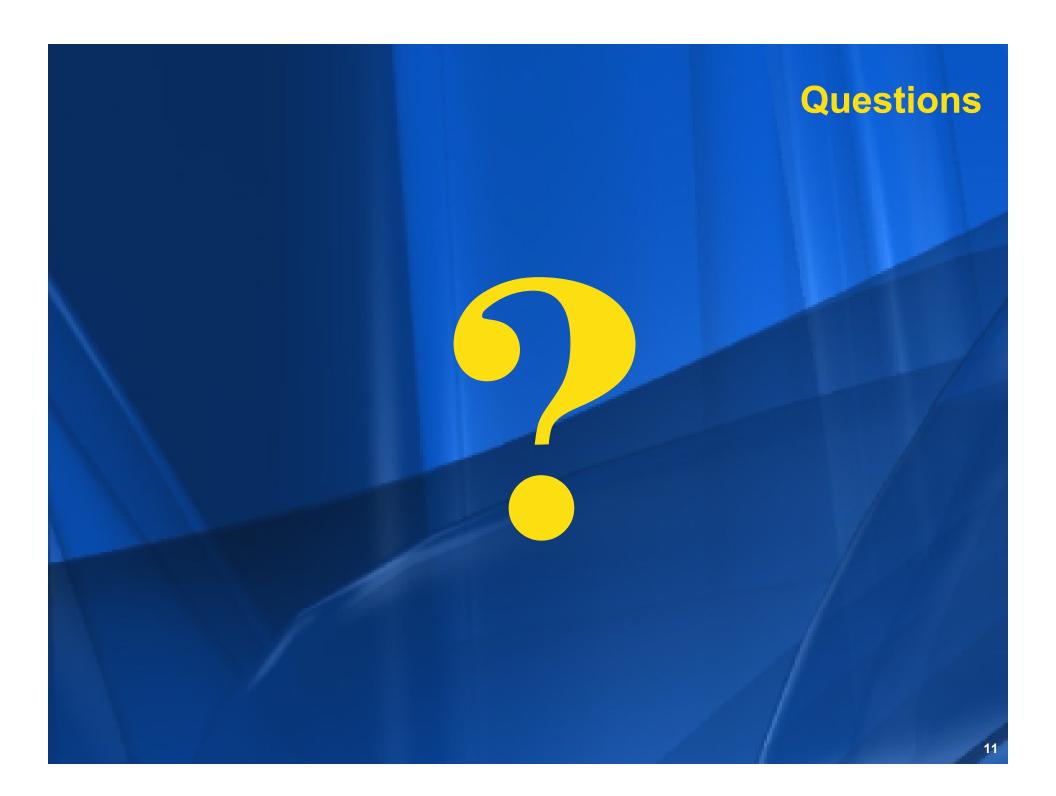
# Conclusions

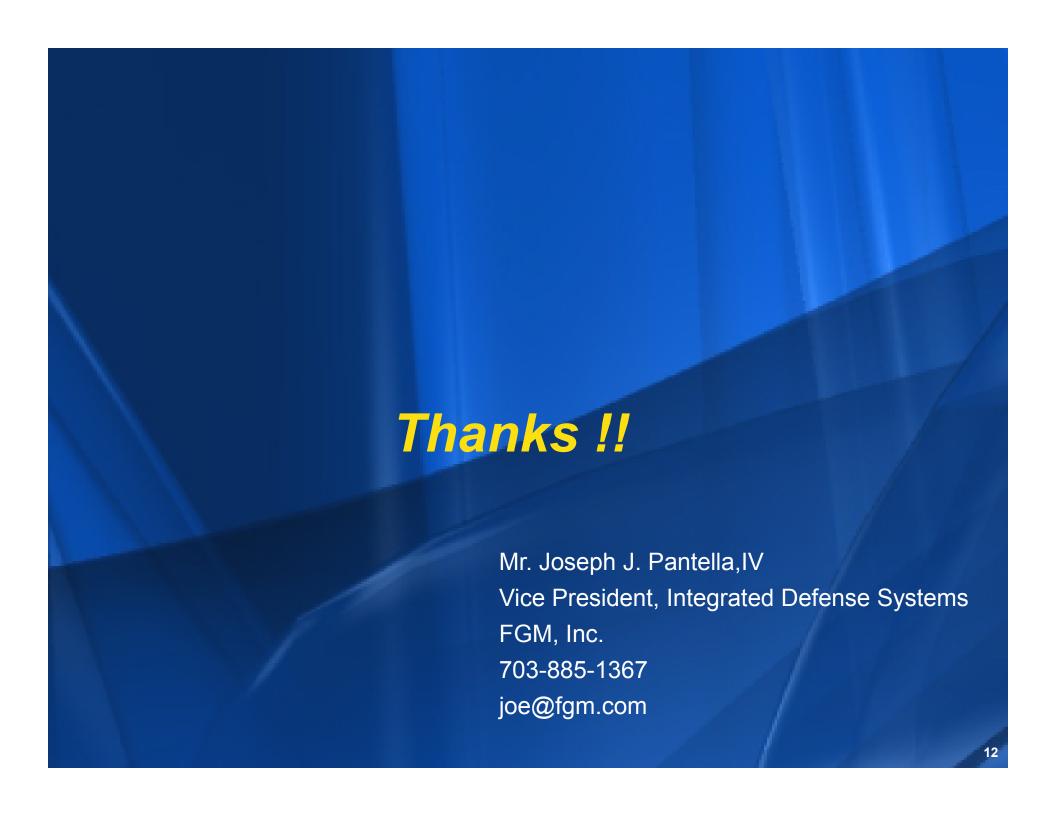
## Conceptually simple services can be incredibly complex

- Service Discovery is a very simple concept
  - Technologies, diversity, culture, security, and competing interests infuse complexity into a material solution
  - UDDI products where the UI closely mimics the UDDI data structure require too much effort for users to understand

## Governance must support diversity and complexity

- Consider the diversity of the Enterprise during the governance processes
- Keep governance policies small, tight, and easy to understand
- Let organizations govern themselves
  - Ensure that Enterprise governance is flexible enough to meet
    Enterprise objectives while allowing organizations within the
    Enterprise to meet their mission objectives
    - Semantic capabilities can go a long way to enabling communities and diffusing conflicts between organizations.





# **Net-Centric Enterprise Services (NCES)**

- NCES provides a foundational suite of SOA enabling and other capabilities focused on enabling the DoD's Net-Centric Data Strategy. These capabilities include:
  - SOA Foundation capabilities
  - Content Discovery capabilities
  - Collaboration capabilities
- The NCES Metadata Environment is a subset of services offered by these capabilities including:
  - Metadata Services
  - Service Discovery
  - Enterprise Catalog